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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,565	01/23/2006	Tomohide Banba	UNIU79.064APC	2113

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EXAMINER

USELDING, JOHN E

ART UNIT	PAPER NUMBER
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4171

NOTIFICATION DATE	DELIVERY MODE
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04/30/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
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Office Action Summary	Application No. 10/565,565	Applicant(s) BANBA ET AL.	
	Examiner John Uselding	Art Unit 4171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 15-18 is/are pending in the application.
4a) Of the above claim(s) 12-14 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5,8 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-4,6,7,9-11,15,16 and 18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/10/2007, 1/23/2006, 11/21/2007, 12/19/2007</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group 1, claim(s) 1-11, and 15-18, drawn to a resin composition.

Group 2, claim(s) 12 and 14, drawn to a dielectric layer.

Group 3, claim(s) 13, drawn to a method of making a substrate having a dielectric layer.

There is a lack of unity in Inventions Groups 1, 2, and 3 because the composition of claim 1 is not novel and therefore there is not inventive link between the claims. The composition of claim 1 is taught by Seiya (JP 2002-105112). Seiya teaches a composition containing glass particles (paragraph 0015), a resin (paragraph 0053), and dibutyl phosphate (paragraph 0061).

2. During a telephone conversation with Mr. Kerry Taylor on 3/31/2007 a provisional election was made without traverse to prosecute the invention of group 1, claims 1-11, and 15-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 12-14 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 9 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 112

4. Claim 9 provides for the use of the resin composition, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 6-7, 9-11, 15-16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Seiya (JP 2002-105112).
7. Regarding claims 1, and 9-11: applicant claims an inorganic powder, a binder resin, and a phosphorus compound represented by formula (1). Seiya teaches a composition containing glass particles (paragraph 0015), a resin (paragraph 0053), and dibutyl phosphate (paragraph 0061).
8. Regarding claim 2: applicant claims the average molecular weight of the binder resin is between 50,000 to 500,000. Seiya teaches a resin with an average molecular weight from 1,000 to 100,000. While these ranges are not identical they significantly overlap.
9. Regarding claim 3: applicant claims binder resin is (meth)acrylic resin. Seiya teaches the use of a (meth)acrylate resin (paragraph 0029).
10. Regarding claim 4: applicant claims that the (meth)acrylic resin has a carboxyl group. Seiya's resin contains carboxyl groups (paragraph 0053).
11. Regarding claim 6 and 15: applicant claims parts by weight of the components. Seiya teaches that the phosphoric acid is added at 0.1-5 parts by weight relative to 100 parts by weight of the inorganic particle (paragraph 0060). While Seiya does not teach a parts by weight for the binder resin the amount of resin used in example 5 in relation to the glass particles meets the range given by the applicant (paragraph 0084).
12. Regarding claim 7: applicant claims glass powder. Seiya teaches glass particles (paragraph 0023).
13. Regarding claim 16: applicant claims that at least one of the R groups is H. Seiya teaches dibutyl phosphate (paragraph 0061), which meets this limitation.

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14. Regarding claim 18: applicant claims a softening point. Seiya teaches a softening point of 400-600°C (paragraph 0018).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1, 4, 5, 8, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (5,380,179).

17. Nishimura et al. teaches a sinterable composition containing 100 parts by weight (column 11, lines 3-7) metal powder (column 11, lines 3-7) which corresponds to applicant's inorganic powder, 3-20 parts by weight of the binder propylene vinyl acetate glycidyl (meth) acrylate copolymer (column 7, lines 35-36) which corresponds to applicant's (meth)acrylate resin with a carboxyl group, and tributyl phosphate (column 9, line 66) which corresponds to applicant's phosphorus compound. The tributyl phosphate is present 20-80% of the binder (column 10, lines 3-8) which correlates to 0.6 (.20 x 3) to 16 (.80 x 20) parts by weight. While these ranges are not identical to the ranges in claim 15 it is obvious to select the overlapping portions.

18. What Nishimura et al. fails to teach is the acid value of claims 5 and 17 and the viscosity of claim 8.

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19. Regarding claims 5 and 17: applicant claims an acid value of 0.5 to 5 KOH mg/g. While Nishimura doesn't teach an acid value within the range of the applicant it is obvious to optimize the number of free acid groups to obtain a desired acid value.

20. Regarding claim 8: applicant claims a viscosity value. While Nishimura et al. doesn't teach a viscosity value it is obvious to optimize the molecular weight of the material to obtain a desired viscosity as this would relate to the ability for the ceramic composition to be molded. .

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Uselding whose telephone number is (571)270-5463. The examiner can normally be reached on Monday-Thursday 6:00a.m. to 4:30p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 4171

John Uselding
Examiner
Art Unit 4171